

## Search Plan and Results

### Question

What is the relationship between alcohol consumption during lactation and the quality and quantity of breast milk available for the offspring? (DGAC 2010)

### Date Searched

12/04/2009

### Inclusion Criteria

- *Subjects/Population:* Human subjects
- *Age:* Children, men and women of all ages
- *Setting:* International
- *Health Status:* Healthy and those with elevated chronic disease risk (CHD/CVD, Type 2 diabetes, metabolic syndrome and obesity)
- *Nutrition Related Problem/Condition:* None.

### Search Criteria

- *Study design preferences:* RCT or clinical controlled studies, large non-randomized observational studies, cohort, case-control studies, systematic reviews and meta-analysis
- *Size of study groups:* The sample size must equal 10 adults for each study group. For example, this would include 10 patients in the intervention group and 10 patients in the control or comparison group
- *Study dropout rate:* Less than 20%; preference for smaller dropout rates
- *Year range:* No date range
- *Authorship:* If an author is included on more than one review article or primary research article that is similar in content, the most recent review or article will be accepted and earlier versions will be rejected
- *Languages:* Limited to articles in English
- *Other:* Article must be published in peer-reviewed journal.

### Exclusion Criteria

- *Subjects/population:*
  - Animal and in vitro studies
  - Malnourished/third-world populations or disease incidence not relative to US population (e.g., malaria)
- *Setting:* Hospitalized patients
- *Health status:* Medical treatment and therapy and diseased subjects
- *Nutrition Related Problem/Condition:* All conditions.

### Search Criteria

- *Size of study groups*: Sample sizes less than 10
- *Study Dropout rate*: If the dropout rate in a study is 20% or greater, the study will be rejected
- *Authorship*: Studies by same author similar in content
- *Languages*: Articles not in English
- *Other*: Abstracts or presentations and articles not peer reviewed (Web sites, magazine articles, Federal reports, etc.).

## Search Terms: Search Vocabulary

### Electronic Databases

PubMed search date 8/12/09 & 10/21/09: ("Ethanol"[Mesh] OR "Alcohol Drinking"[mesh] OR "Alcoholic Beverages"[Mesh]) AND (lactation[mh] OR breast feed\* OR (breast fed\*))

PubMed search date: 12/3/09: No date range ("Ethanol"[Mesh] OR "Alcohol Drinking"[mesh] OR "Alcoholic Beverages"[Mesh]) AND ((breast milk) OR "Milk, Human"[Mesh])

("Ethanol"[Mesh] OR "Alcohol Drinking"[mesh] OR "Alcoholic Beverages"[Mesh]) AND (postnatal OR "Postpartum Period"[Mesh] OR postpartum OR "Breast Feeding"[Mesh] OR lactation[mh])

**Total hits from all electronic database searches:** 324

**Total articles identified to review from electronic databases:** 46

Articles Identified Via Handsearch or Other Means

Hand-search: 2 articles

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Summary of Articles Identified to Review

**Number of Primary Articles Identified:** 11

**Number of Review Articles Identified:** 0

**Total Number of Articles Identified:** 13

**Number of Articles Reviewed but Excluded:** 35

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List of Articles Included for Evidence Analysis

Chien YC, Huang YJ, Hsu CS, Chao JC, Liu JF. [Maternal lactation characteristics after consumption of an alcoholic soup during the postpartum 'doing-the-month' ritual.](#) *Public Health Nutr.* 2009 Mar; 12(3): 382-388. Epub 2008 Apr 22. PMID: 18426631.

Chien YC, Liu JF, Huang YJ, Hsu CS, Chao JC. [Alcohol levels in Chinese lactating mothers after consumption of alcoholic diet during postpartum "doing-the-month" ritual.](#) *Alcohol.* 2005 Nov; 37(3): 143-150. PMID: 16713502.

Cobo E. [Effect of different doses of ethanol on the milk-ejecting reflex in lactating women.](#) *Am J Obstet Gynecol.* 1973 Mar 15; 115(6): 817-821. PMID: 4688584.

Mennella JA. Infants' suckling responses to the flavor of alcohol in mothers' milk. *Alcohol Clin Exp Res.* 1997 Jun; 21(4): 581-585. PMID: 9194908.

Mennella JA. [Regulation of milk intake after exposure to alcohol in mothers' milk.](#) *Alcohol Clin Exp Res.* 2001 Apr; 25(4): 590-593. PMID: 11329500.

Mennella JA. [Short-term effects of maternal alcohol consumption on lactational performance.](#) *Alcohol Clin Exp Res.* 1998 Oct; 22(7): 1, 389-1, 392. PMID: 9802517.

Mennella JA, Beauchamp GK. [Beer, breast feeding, and folklore.](#) *Dev Psychobiol.* 1993 Dec; 26(8): 459-466. PMID: 8293892.

Mennella JA, Beauchamp GK. [The transfer of alcohol to human milk. Effects on flavor and the infant's behavior.](#) *N Engl J Med.* 1991 Oct 3; 325(14): 981-985. PMID: 1886634.

Mennella JA, Pepino MY. [Biphasic effects of moderate drinking on prolactin during lactation.](#) *Alcohol Clin Exp Res.* 2008 Nov; 32(11): 1, 899-1, 908. Epub 2008 Aug 18. PMID: 18715274 (Hand search - 12-08-09).

[Mennella JA, Pepino MY.](#) Breast pumping and lactational state exert differential effects on ethanol pharmacokinetics. Monell Chemical Senses Center, Philadelphia, PA 19104, USA. *Alcohol.* 2010 Mar; 44(2): 141-148. Epub 2010 Jan 6. PMID: 20056373 (Hand search - 03-08-10).

[Mennella JA, Pepino MY, Teff KL.](#) Acute alcohol consumption disrupts the hormonal milieu of lactating women. *J Clin Endocrinol Metab.* 2005 Apr; 90(4): 1, 979-1, 985. Epub 2004 Dec 28. PMID: 15623810.

Pepino MY, Mennella JA. [Effects of breast pumping on the pharmacokinetics and pharmacodynamics of ethanol during lactation.](#) *Clin Pharmacol Ther.* 2008 Dec; 84(6): 710-714. Epub 2008 Jul 2. PMID: 18596681.

Pepino MY, Steinmeyer AL, Mennella JA. Lactational state modifies alcohol pharmacokinetics in women. Monell Chemical Senses Center, Philadelphia, Pennsylvania, USA. *Alcohol Clin Exp Res.* 2007 June; 31(6): 909-918.

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## List of Excluded Articles with Reason

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Article	Reason for Exclusion
Alvik A, Haldorsen T, Lindemann R. <a href="#">Alcohol consumption, smoking and breastfeeding in the first six months after delivery</a> . <i>Acta Paediatr.</i> 2006 Jun; 95(6): 686-693. PMID: 16754549.	About drinking levels during lactation.
<a href="#">Anderson PO. Alcohol and breastfeeding</a> . <i>J Hum Lact.</i> 1995 Dec; 11(4): 321-323. No abstract available. PMID: 8634110.	Comment.
<a href="#">Backstrand JR, Goodman AH, Allen LH, Pelto GH.</a> Pulque intake during pregnancy and lactation in rural Mexico: Alcohol and child growth from 1 to 57 months. <a href="#">Eur J Clin Nutr.</a> 2004 Dec; 58(12): 1, 626-1, 634. PMID: 15280906.	Does not answer the question; about lactation and health of the offspring.
<a href="#">Binkiewicz A, Robinson MJ, Senior B. Pseudo-Cushing syndrome caused by alcohol in breast milk</a> . <i>J Pediatr.</i> 1978 Dec; 93(6): 965-967. No abstract available. PMID: 722441.	Does not answer the question; about Cushing syndrome.
<a href="#">Chaves RG, Lamounier JA, César CC. Factors associated with duration of breastfeeding</a> . <i>J Pediatr (Rio J).</i> 2007 May-Jun; 83(3): 241-246. Epub 2007 Apr 20. PMID: 17486198.	Does not answer the question; about factors associated with breastfeeding.
<a href="#">Dewailly E, Ayotte P, Laliberté C, Weber JP, Gingras S, Nantel AJ. Polychlorinated biphenyl (PCB) and dichlorodiphenyl dichloroethylene (DDE) concentrations in the breast milk of women in Quebec</a> . <i>Am J Public Health.</i> 1996 Sep; 86(9): 1, 241-1, 246. PMID: 1380586.	Does not answer the question; about chemicals in breast-milk.
<a href="#">Flores-Huerta S, Hernández-Montes H, Argote RM, Villalpando S. Effects of ethanol consumption during pregnancy and lactation on the outcome and postnatal growth of the offspring</a> .	Does not answer the question; about lactation and health of the offspring.
<a href="#">Giglia RC, Binns CW. Alcohol and breastfeeding: What do Australian mothers know?</a> <i>Asia Pac J Clin Nutr.</i> 2007; 16 Suppl 1: 473-477. PMID: 17392153.	Does not answer the question; about levels of knowledge of the danger of drinking OH during breastfeeding.
<a href="#">Giglia RC, Binns CW. Alcohol, pregnancy and breastfeeding: A comparison of the 1995 and 2001 National Health Survey data</a> . <i>Breastfeed Rev.</i> 2008 Mar; 16(1): 17-24. PMID: 18546573.	Does not answer the question; about patterns of alcohol intake.
<a href="#">Giglia RC, Binns CW, Alfonso HS, Scott JA, Oddy WH. The effect of alcohol intake on breastfeeding duration in Australian women</a> . <i>Acta Paediatr.</i> 2008 May; 97(5): 624-629. PMID: 18394108.	Does not answer the question; about breastfeeding duration and OH intake.

Gottesfeld Z, Abel EL. <a href="#">Maternal and paternal alcohol use: effects on the immune system of the offspring</a> . <i>Life Sci</i> . 1991; 48(1): 1-8. Review. PMID: 1986181.	Does not answer the question; about lactation and health of the offspring.
Ho E, Collantes A, Kapur BM, Moretti M, Koren G. <a href="#">Alcohol and breast feeding: Calculation of time to zero level in milk</a> . <i>Biol Neonate</i> . 2001; 80(3): 219-222. PMID: 11585986.	No intervention; modeled time to alcohol clearance in breast milk.
Howard CR, Lawrence RA. <a href="#">Breast-feeding and drug exposure</a> . <i>Obstet Gynecol Clin North Am</i> . 1998 Mar; 25(1): 195-217. Review. PMID: 9547767.	Does not answer the question; about lactation and health of the offspring.
Kacew S. <a href="#">Adverse effects of drugs and chemicals in breast milk on the nursing infant</a> . <i>J Clin Pharmacol</i> . 1993 Mar; 33(3): 213-221. Review. PMID: 8463434.	Does not answer the question; about drugs and chemicals in breast-milk.
Kochenour NK, Emery MG. <a href="#">Drugs in lactating women</a> . <i>Obstet Gynecol Annu</i> . 1981; 10: 107-126. Review. No abstract available. PMID: 7024869.	Does not answer the question; about lactation and health of the offspring.
Koletzko B, Lehner F. <a href="#">Beer and breastfeeding</a> . <i>Adv Exp Med Biol</i> . 2000; 478: 23-28. Review. PMID: 11065057.	Publication.
Koren G. <a href="#">Drinking alcohol while breastfeeding. Will it harm my baby?</a> <i>Can Fam Physician</i> . 2002 Jan; 48: 39-41. PMID: 11852608.	Commentary.
Lawton ME. <a href="#">Alcohol in breast milk</a> . <i>Aust N Z J Obstet Gynaecol</i> . 1985 Feb; 25(1): 71-73. PMID: 3862407.	Sample size (N=8), less than inclusion criterion.
Liston J. <a href="#">Breastfeeding and the use of recreational drugs: Alcohol, caffeine, nicotine and marijuana</a> . <i>Breastfeed Rev</i> . 1998 Aug; 6(2): 27-30. PMID: 9849117.	Does not answer the question; about lactation and health of the offspring.
Little RE, Anderson KW, Ervin CH, Worthington-Roberts B, Clarren SK. <a href="#">Maternal alcohol use during breast-feeding and infant mental and motor development at one year</a> . <i>N Engl J Med</i> . 1989 Aug 17; 321(7): 425-430. PMID: 2761576.	Does not answer the question; about lactation and health of the offspring.
Little RE, Lambert MD, Worthington-Roberts B. <a href="#">Drinking and smoking at 3 months postpartum by lactation history</a> . <i>Paediatr Perinat Epidemiol</i> . 1990 Jul; 4(3): 290-302. PMID: 2374748.	Does not answer the question; about behavior in postpartum drinking.

Little RE, Northstone K, Golding J; ALSPAC Study Team. <a href="#">Alcohol, breastfeeding, and development at 18 months</a> . <i>Pediatrics</i> . 2002 May; 109(5): E72-E72. PMID: 11986478.	Does not answer the question; about lactation and health of the offspring.
Ludvigsson JF, Ludvigsson J. <a href="#">Socio-economic determinants, maternal smoking and coffee consumption, and exclusive breastfeeding in 10205 children</a> . <i>Acta Paediatr</i> . 2005 Sep; 94(9): 1, 310-1, 319. PMID: 16278998.	Does not answer the question; about socio-economic determinants of breastfeeding.
Matheson I, Kristensen K, Lunde PK. <a href="#">Drug utilization in breast-feeding women. A survey in Oslo</a> . <i>Eur J Clin Pharmacol</i> . 1990; 38(5): 453-459. PMID: 1974205.	Does not answer the question; about drug utilization in breastfeeding women.
<a href="#">Mennella J. Alcohol's effect on lactation</a> . <i>Alcohol Res Health</i> . 2001; 25(3): 230-234. Review. PMID: 11810962.	NI AAA publication.
<a href="#">Mennella JA, Garcia-Gomez PL. Sleep disturbances after acute exposure to alcohol in mothers' milk</a> . <i>Alcohol</i> . 2001 Nov; 25(3): 153-158. PMID: 11839458.	Does not answer the question; about lactation and infant sleep disturbances.
<a href="#">Mennella JA, Gerrish CJ. Effects of exposure to alcohol in mother's milk on infant sleep</a> . <i>Pediatrics</i> . 1998 May; 101(5): E2. PMID: 9565435.	Does not answer the question; about lactation and infant sleep disturbances
<a href="#">Na HR, Daniels LC, Seelig LL Jr. Preliminary study of how alcohol consumption during pregnancy affects immune components in breast milk and blood of postpartum women</a> . <i>Alcohol Alcohol</i> . 1997 Sep-Oct; 32(5): 581-589. PMID: 9373700.	Does not answer the question; about influence of pregnancy OH intake on breast-milk.
<a href="#">Rayburn WF</a> . Adverse reproductive effects of beer drinking. <i>Reprod Toxicol</i> . 2007 Jul; 24(1): 126-130. Epub 2007 May 3. PMID: 17544619.	Systematic review included studies tested animals.
Schimmel MS, Eidelman AI, Wilschanski MA, Shaw D Jr, Ogilvie RJ, Koren G. <a href="#">Toxic effects of atenolol consumed during breast feeding</a> . <i>J Pediatr</i> . 1989 Mar; 114(3): 476-478. No abstract available. Erratum in: <i>J Pediatr</i> . 1990 Jan; 116(1): 158. Schmimmel, MS [corrected to Schimmel, MS]; Eidelman, AJ [corrected to Eidelman, AI]. PMID: 2921694.	Does not answer the question; about atenolol effects during breastfeeding.
<a href="#">Schulte P. Minimizing alcohol exposure of the breastfeeding infant</a> . <i>J Hum Lact</i> . 1995 Dec; 1(4): 317-319. PMID: 8634109.	Comment.

<p>Somogyi A, Beck H. <a href="#">Nurturing and breast-feeding: exposure to chemicals in breast milk</a>. <i>Environ Health Perspect.</i> 1993 Jul; 101 Suppl 2: 45-52. Review. PMID: 8243405.</p>	<p>Descriptive; chemicals in breast-milk.</p>
<p>Villalpando S, Flores-Huerta S, Fajardo A, Hernandez-Beltran MJ. <a href="#">Ethanol consumption during pregnancy and lactation. Changes in the nutritional status of predominantly breastfeeding mothers</a>. <i>Arch Med Res.</i> 1993 Winter; 24(4): 333-338. PMID: 8118156.</p>	<p>Does not answer the question; about mothers' health and OH consumption.</p>
<p>Wolin MJ, Yerry S, Miller TL, Zhang Y, Bank S. <a href="#">Changes in production of ethanol, acids and H<sub>2</sub> from glucose by the fecal flora of a 16- to 158-day-old breast-fed infant</a>. <i>J Nutr.</i> 1998 Jan; 128(1): 85-90. PMID: 9430607.</p>	<p>Does not answer the question; about ethanol changes in the breast-feeding infant.</p>